RDECOM

TARDEC

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Advanced Planning Briefing for Academia

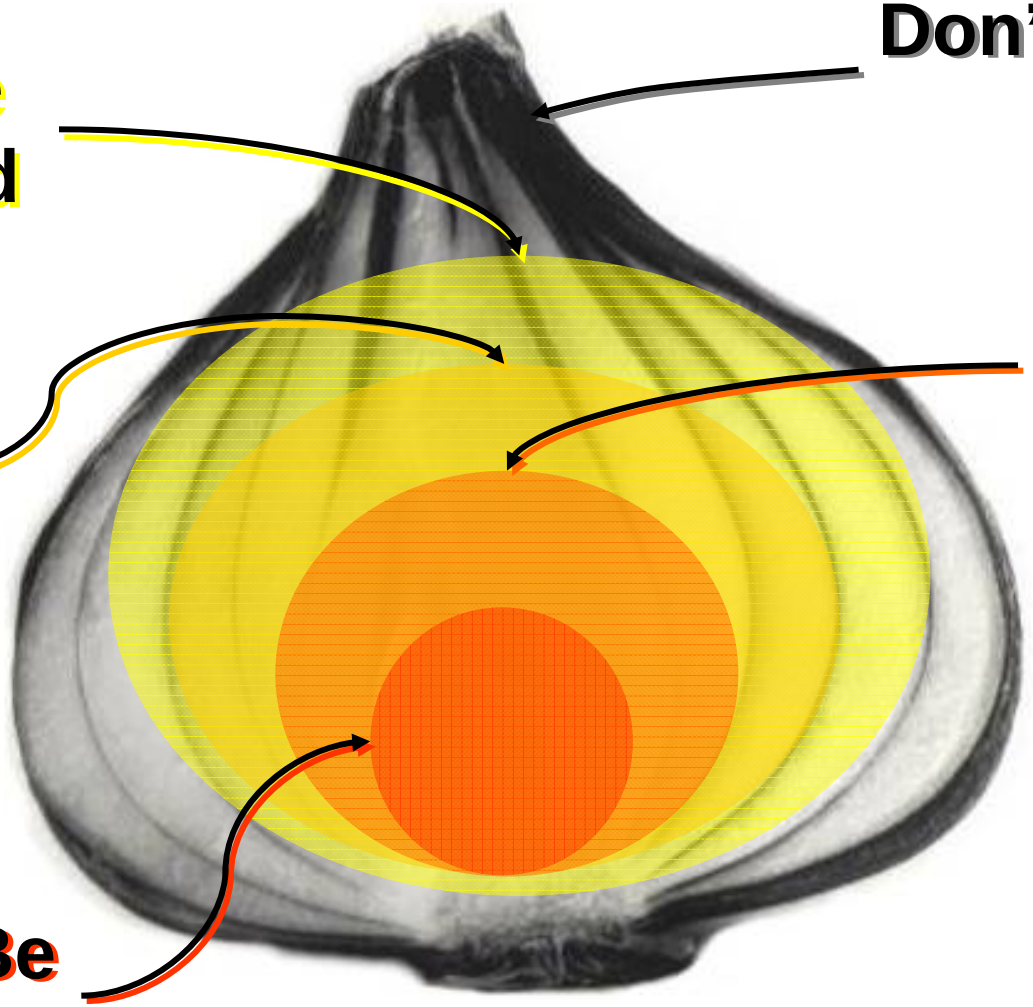
APBA

Ground Vehicle Survivability

Mr. Steve Knott

April 15, 2008

The Integrated Survivability "Onion"



Don't Be Seen

Don't Be Acquired

Don't Be Penetrated

Don't Be Hit

Don't Be Killed

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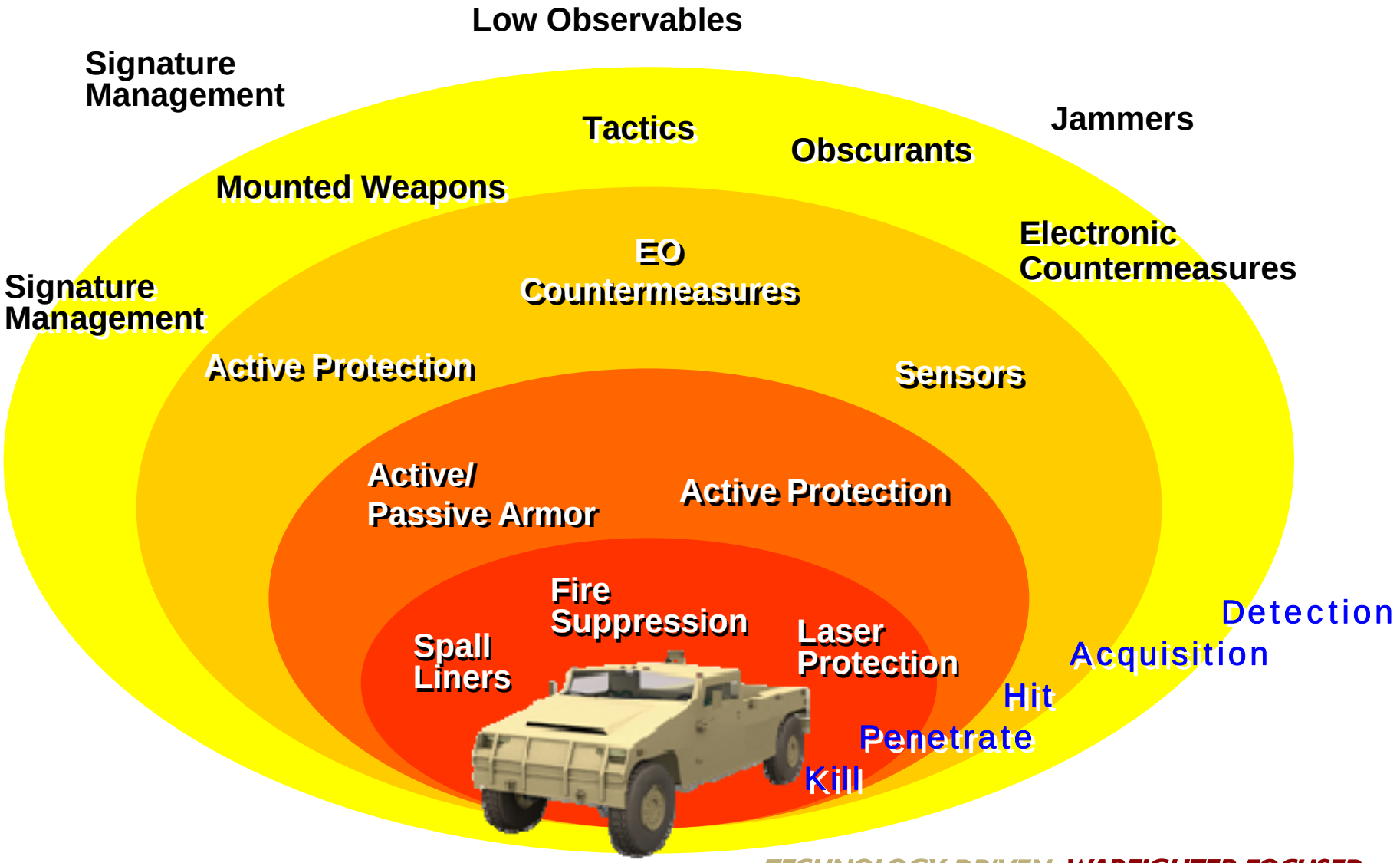
Research Focus Areas



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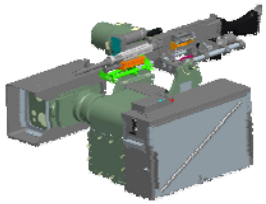
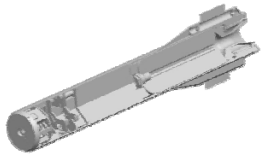
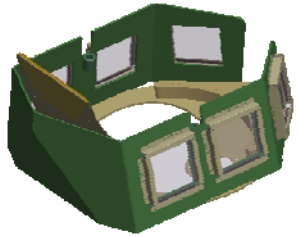
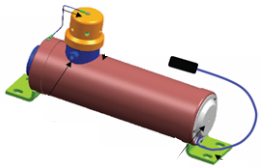
Design for Survivability










It's about balancing integration, mission, threat & technology

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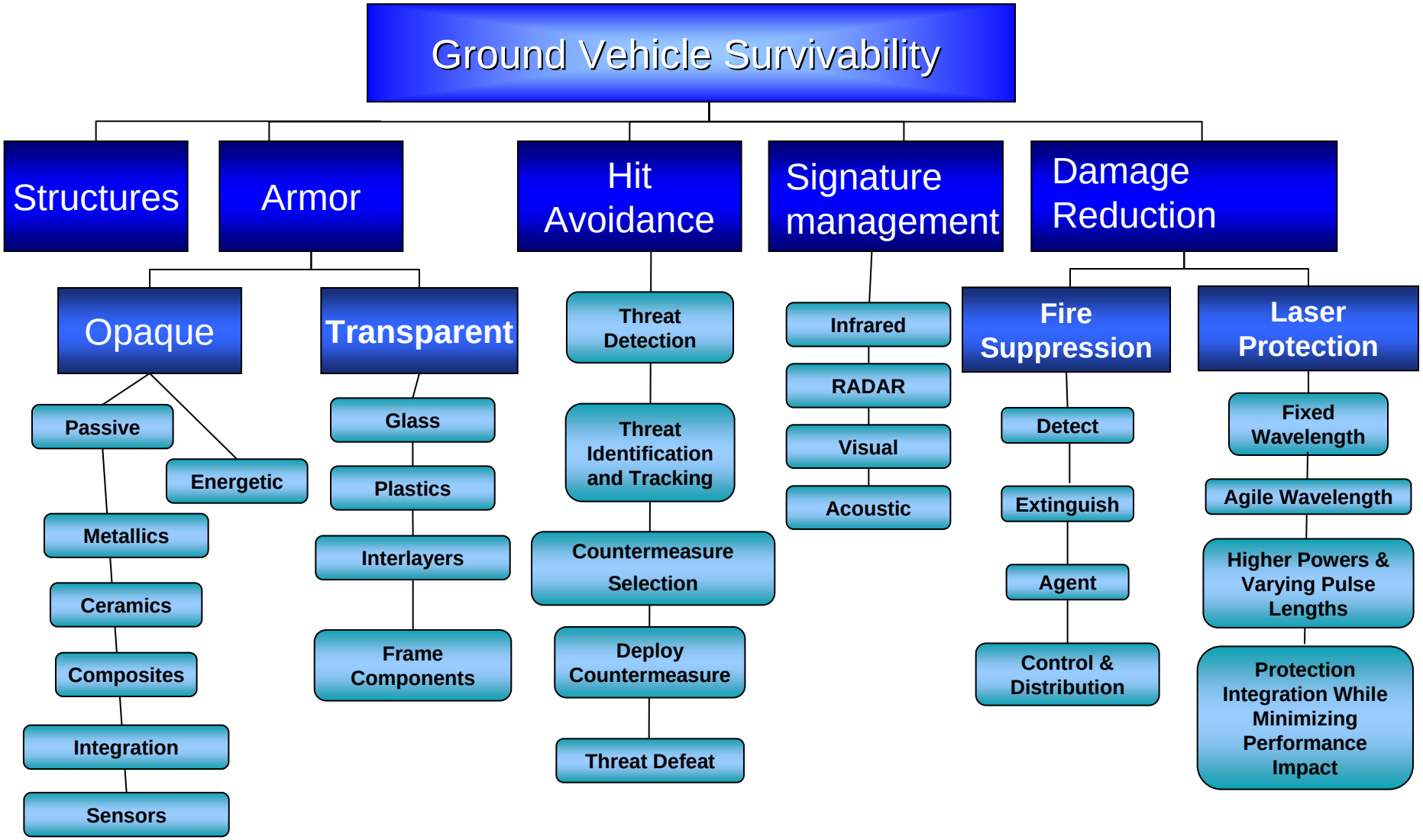
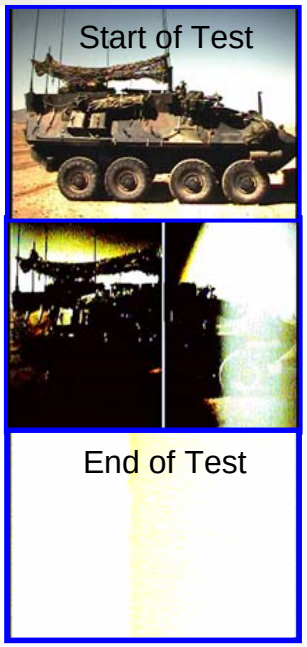
Research Focus Areas Taxonomy

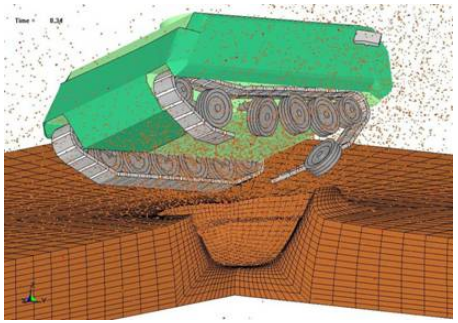


Survivability – Technology Research Gaps

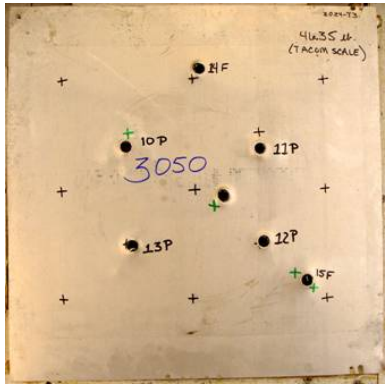
Multifunctional signature materials (visual, thermal RF, acoustic)



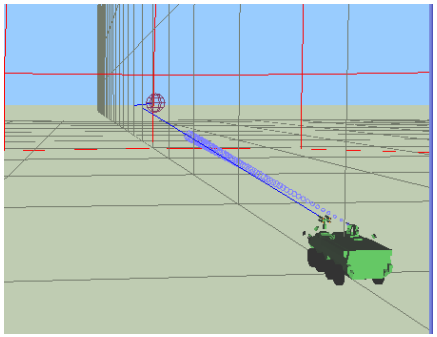
Mechanisms that switch high to very low optical transmission in a fraction of a nanosecond, and operate at all visible and near IR wavelengths.



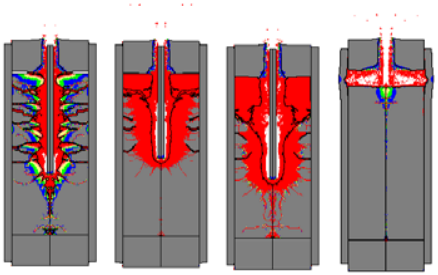
Predictive analysis of blast events – structures & crew



Lightweight multiple-hit armor



Predictive analysis for Active Protection systems



M&S for high velocity impact on ceramic/composites

Predictive M&S - visual detection model

External fire extinguishing systems and agents

Developing countermeasures to defeat full-spectrum threat munitions

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TARDEC Success Stories

- Armor panel manufacturing
- Resin/binder analysis
- Vehicle structural beam construction
- Structural beam testing (environmental / durability)
- Armor ballistic testing
- Active protection system, systems engineering
- Active protection system event modeling
- Vehicle fuel tank research
- Ceramic transparent armor research
- Blast mitigation research